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PORCELAIN.

COFFEE POT IN BÖTTCHER WARE.

THE maxim that a thing of beauty is a joy forever has found, we think, a complete realization in the manufacture of porcelain. This magnificent industry has produced objects which, whether regarded from the standpoint of utility or the still greater standpoint of unique and exquisite luxuries for the eye and mind, may be denominated as perhaps the highest and most precious of the industrial arts. In porcelain, the genius of man has rivalled—and in many cases outshone—the beauty and delight of precious stones, and in faience, majolica, hard and soft porcelain, we possess deep and mysterious colors, as well as the most tender of tints, that outshine the splendor of the ruby, the emerald and the sapphire. What the French call the *jeux de la flamme et du hasard*, which, vitrifying both the paste and its metallic clays in the furnace, produces the weirdest and most magical of tones, and it often happens that a result in the way of color, totally unlooked for, and yet even more splendid than the wished-for tint, is produced by the flames that convert the soft clay into porcelain. In one jar, or vase, the red is deepened an intense ruby color, while in another it is burnt to the color of mulberry juice. Some porcelain is whiter than snow, and the blue and rose tints in other cases are delightful beyond expression.

The manufacture of porcelain is undoubtedly one of the oldest of the industrial arts, for, although there is no possibility of arriving at the absolute date when the manufacture began, we do know that it was in vogue in the second century before the Christian era. In porcelain, man simply transforms what was formerly a hard rock decomposed into clay by nature, into a hard rock once more. The soft rock is washed, ground, mixed, filtered, rolled and compacted, so as to give the elements plasticity, homogeneity and cohesion. The object is dipped into a metallic glaze, and is baked in a furnace, where it is transmuted into a hard, white, translucent substance, so perfectly vitrified that the glaze and the beauty have become melted into a piece of vitrified rock. Vitrification is the secret of the whole business. The vitrification of any given clay depends upon the substance itself, and the degree of heat to which it is subjected. The more perfect the vitrification, the more precious will be the object. If we take a piece of glass, a piece of rock crystal and a diamond, and place them side by side, we find that the diamond gives the eye the most pleasure. This is because it reflects more luminous rays than rock crystal or glass, and it does so because it is more compact, more dense, more homogeneous, and it is more homogeneous because it has been transmuted at a higher temperature; accordingly, the higher the temperature to which a piece of porcelain has been subjected, the more perfect will be its vitrification, and nearer will be its aspect to that of precious stones. It would be quite possible to compare all the different porcelains of the world with respect to their vitrification, but such a category is not desirable, because the value of porcelain depends also to a great extent upon the country in which it is made, its historical and traditional associations, the originality of its form and decoration, all of which are sources of quality and preciousness that are a part of the substance itself. The best of porcelain, either Oriental or European, is composed of the same elements, that is, kaolin and petuntse, known as decomposed and indecomposed felspath, together with minute quantities of silica, alumina, potash, etc. The chief ingredients in Chinese porcelain are kaolin, so called after Kaouling, a hill to the east of King-te ching, whence some of it is obtained, and petuntse, a granitic rock. The chemical composition of Chinese kaolins and felspars is not identically the same as similar materials found in Europe, therefore the Chinese paste is more fusible than the European paste, and Chinese porcelain is more tender and its fabrication easier than the harder European porcelain, which, contrary to an accepted prejudice, is superior to the Oriental product.

It is to Chinese porcelain that European and all the Eastern ceramic arts are due. Invented at least as early as the second century before our era, Chinese porcelain found its way to Japan on the one hand and through Persia to Europe on the other. It appeared in Europe as early as the tenth century, and Marco Polo, the first European who visited China, published in his book at the end of the thirteenth century a note on the nature and process of the manufacture of porcelain. The wildest theories were circulated as to its manufacture, and European potters in their eagerness to discover the secret of its manufacture gave credit to the most absurd recipes, and while for a long time they were unable to reproduce the porcelain, they discovered through the use of the elements employed, majolica, Italian and French faience, grès, and different kinds of *pâte tendre*. In the end, however, the secret of translucent porcelain was discovered, and to-day the finest hard Limoges or Sevres porcelain is absolutely the ideal of ceramic production.

In China, as in Europe, we find some pieces prized simply for their tones of color, and others for the painting that has been lavished upon them. Their colors are both gentle and powerful, and display the most brilliant of all imaginable hues. There is the gorgeous *sang de bœuf*, and there are the splendid coral reds, and some with beautiful tints of rose, due to the chloride of gold. There is a whole family of green porcelains, including apple and olive green, the most beautiful tones of yellow, and splendid tones of mirror black and ivory white. There are glazes imitating the color of a mule's lung, and a horse's liver, and others of a plum and peach color. There are light violets, strange tones of cobalt, turquoise, ultramarine, lavender and blue, with imitations of jasper, chalcedony and marble. Every color sensation that can arise from the gradation, toning and clouding of color, may be aroused by contemplating the productions of Chinese ceramics. The decorated Chinese porcelain ware is covered with human figures, garden scenes, peonies, hawthorn, birds, butterflies, bats, dragons, and monsters of all sorts, scrolls, conventionalized foliage and diapers. These products of the land of the rising sun were first introduced into Europe in the sixteenth century by the Portuguese, and princesses, duchesses and capitalists competed against each other for the possession of such precious wares. Small vases only a few inches in diameter are worth hundreds of dollars, while pieces of any size, showing particularly beautiful coloring, or excellent modelling, or fine painting, may be worth thousands. The Chinese have made wonderful porcelain, but in the decoration thereof their artists frequently

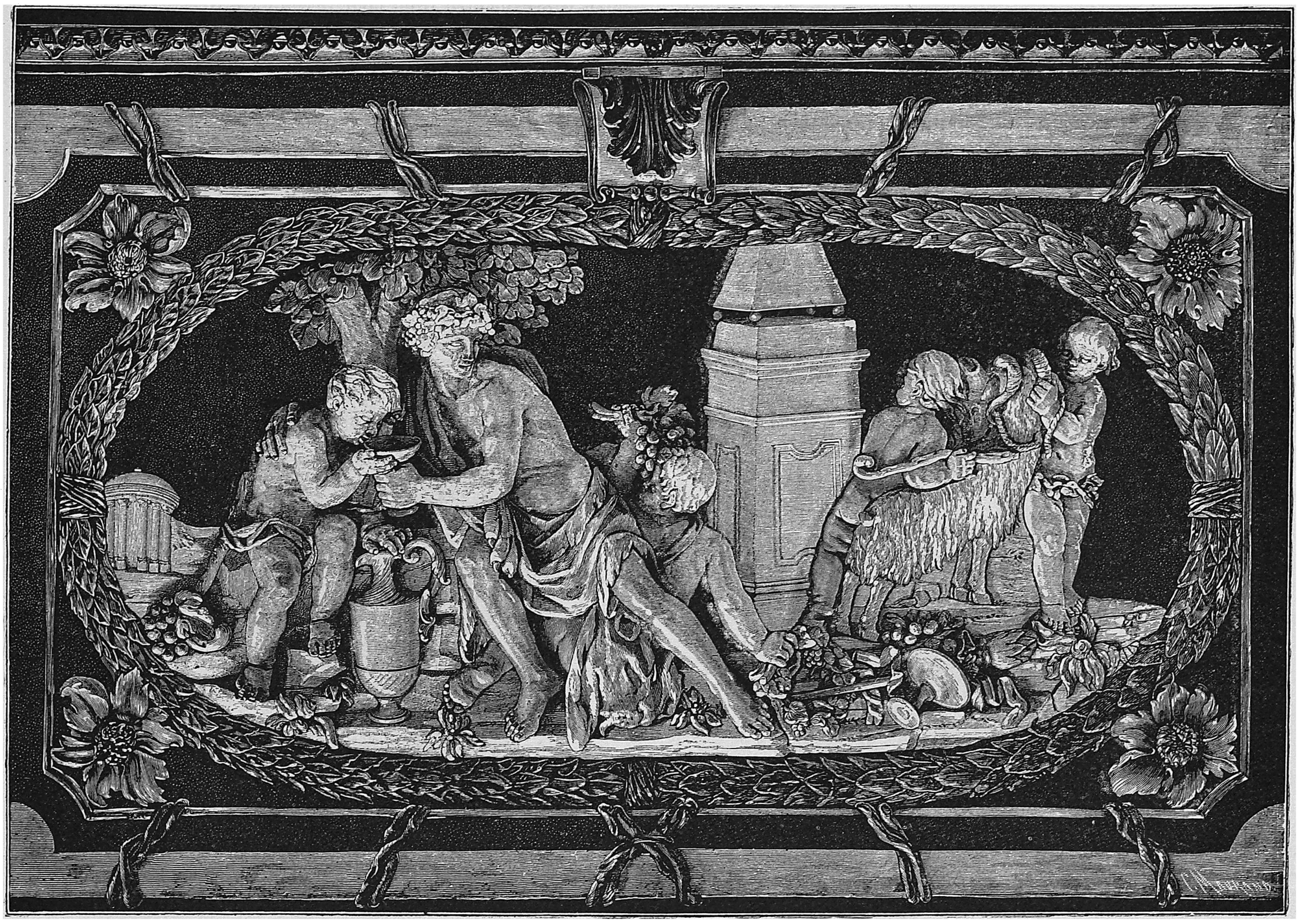
HAVILAND VASE WITH GOLD ORNAMENTATION.

exhibit a tendency toward the monstrous and distorted, which offends our finer taste.

Center-piece in White Porcelain. (Manufactured at Limoges.)

As every trade in China has its particular deity, so Pousa, who is also the God of Contentment, is the Potter's god. The legend accounting for his being elevated to that position says that the then reigning Emperor insisted upon porcelain being made for him, although he was told that its manufacture was an impossibility. The Emperor was determined to get what he wanted, and after innumerable and futile attempts, one of the potters, Pousa by name, threw himself in despair into the fiery furnace. When the contents of the kiln were taken out, it was found that the admixture of a human body had produced the desired result, and Pousa was made a god, and his effigy, a corpulent being leaning on a wine skin, appears frequently on specimens of the art over which he is supposed to preside. In fact, almost every ornament in Chinese work has a special signification and is a portion of the symbolism which has so great a hold upon the people. Color, too, is valuable as fixing the date of the manufacture of certain pieces. For instance, the Tsin dynasty, A. D. 265, took blue as its imperial color; the Soui, 581-618, green; the Thang, 618-907, white, and so on. The points of the compass and the elements are also represented by colors, red symbolizing the fire and the south; black, water and the north; green, wood and the east; white, metal and the west. The disadvantage of this multiplication of meanings attached to colors is that it is occasionally difficult to distinguish the dynastic from the symbolical meaning, but of the various descriptions of Chinese porcelain the date of which can be absolutely fixed, the most highly prized are the azure, or "blue of the sky after rain," adopted by the Tcheou dynasty; the Jou-yao, a very fine blue; the Kouan-yao, of two shades of blue with a slightly reddish tint; the Tchang, of pale blue and rice-colored crackle; and the Ting-yao, of red, white, brown and black. The four last-mentioned wares were produced under the Song dynasty. The yellow porcelain, designed for and restricted to the use of the Imperial family, was not allowed to be exported, and is consequently unknown in Europe. To these must be added the white porcelain of Tokien, so highly prized by the Chinese that fragments of it are held to be as precious as jewels, and the blue-and-white Nankin manufacture, which is comparatively modern.

Japanese porcelain, and also that produced by the Koreans, very closely resembles Chinese ware, so closely indeed that very frequently only a practised eye can detect the difference. The Japanese undoubtedly obtained their knowledge of the art from China, but, as is the case with every invention they adopt, they surpassed their masters, and succeeded in producing a ware which is superior to the Chinese, both in the quality of their paste and the brilliancy of their white. Another difference is found in the greater delicacy and chasteness of design in the method of Japanese ornamentation and in its close adherence to nature. The ware known as "Old Satsuma" was made in the province of Satsuma, in the most southern of the three islands composing the Empire of Japan, by Korean potters. The Japanese General, Hideyoshi, devastated Korea at the end of the sixteenth century, and Yoshihiro, the futile chief of Satsuma, not content with the destruction he had succeeded in bringing upon the unfortunate Koreans, robbed the country of some of its most skilful potters who, with their families, were brought back as prisoners, and who were destined with their descendants to work for the glory of Satsuma and Japan. The oldest kind of Japanese ware was of a quaint shape with curiously embossed figures painted on a white ground in red and blue. The most perfect production is a fine vitreous porcelain, the paste of which is prepared with extreme labor. It is so white and thin as to be perfectly translucent, and the glaze is so equal and clear and so colorless, that one can scarcely believe it to be the work of the potter. The specimens brought to Europe were mostly cups and saucers. The Japanese themselves value more highly the intrinsic merit and beauty of their unobtrusive glazes than the decorative pottery known to Western people under the name of Kioto, Kaga and Satsuma. There are the rich brown of the Seto glaze, the deep gray of the Karatsu, and the ripe and varied autumnal browns in the tea jars of Omo and Iga, and the delicious fawns and buffs of Takatori, which must be studied to be appreciated. What is known as Satsuma forms only an incidental part of these treasures.

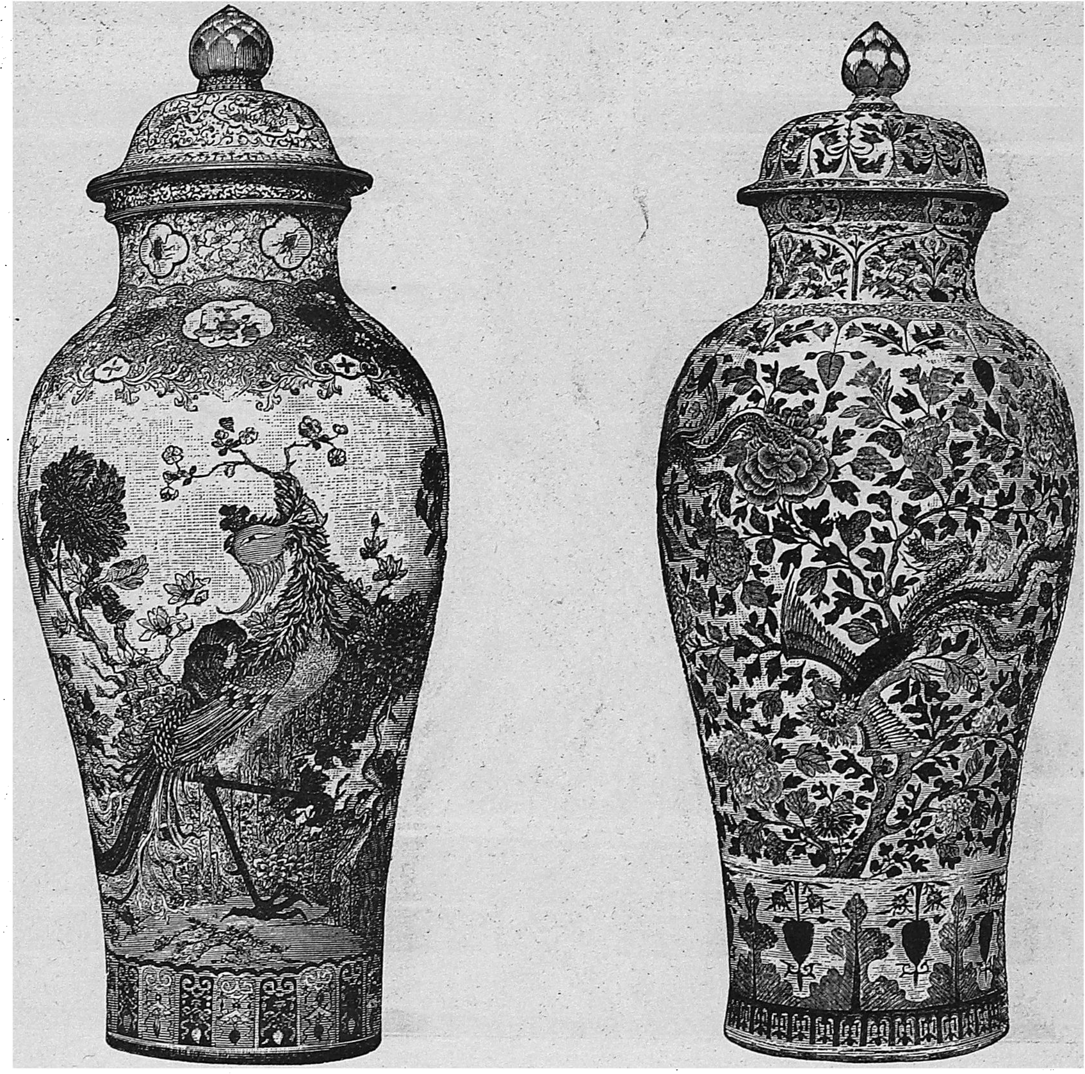


ONE OF THE PORCELAIN SLABS IN THE SALA DE PORCELLANA, ROYAL PALACE OF MADRID.

Sèvres porcelain, that is to say, Old Sèvres, which possessed the *pâte tendre*, or soft body, is unquestionably the most beautiful and precious porcelain ever produced. It is a purely chemical composition, very soft and vitreous, and can be entirely fused in a furnace at the very highest temperature, but the hard porcelain cannot. Marvellous works in porcelain, especially flowers and bouquets, were made early in the seventeenth century, under the patronage of Louis XV. Once when the King visited Madame La Pompadour, she took him into a hothouse, where was a parterre filled with roses, lilies, and other flowers, all of delicate perfume. The King stooped to gather one, and had scarcely touched it before he discovered that they were porcelain, scented with volatilized essences. The modern hard porcelain of Sèvres, even the splendid ware of the present day, is distinguished by very different qualities, and is inferior to old Sèvres porcelain. The hard paste in comparison with the soft has a crude and faded look, and the enamel colors rest upon the surface instead of mingling with or sinking into it. Sèvres porcelain for domestic use had commonly a plain ground, painted with flowers, detached or in wreaths. Pieces intended for decoration or for state dinner services, had generally colored grounds, such as the *bleu de roi*, or blue turquoise, green, or a lovely rose pink. The skilful artists were employed upon the highest class, which was decorated with landscapes, flowers, birds and cupids, portraits and miniatures. Sèvres produced also admirably modelled groups and single figures in biscuit, of which the group by Pagou, entitled "Queen Marie Antoinette and the First Dauphin," is a fine example. Sèvres porcelain has always been an extremely expensive production. A few years ago, a set of three jardinières fetched at auction in London the enormous sum of $50,000. With regard to the marks on Sèvres porcelain, all pieces are considered to have been painted before 1753 which have the crossed L's without a letter. At that date, a letter of the alphabet marking each year, beginning with A, was placed on the pieces.

The porcelain industry at Limoges is of comparatively recent origin, but it is now the great centre of the French porcelain manufacture. The renown of the porcelain industry in this centre is largely due to Messrs. Daniel and David Haviland, of New York, who, in 1856, established what has since grown to be the largest and best of the thirty-five porcelain manufactories at present in Limoges. The Havilands revolutionized the porcelain industry by making an exhaustive study of the typical forms of ceramic art in Japan, China and Persia, by taking advantage of all the discoveries of modern science, and by substituting mechanical processes for hand labor in fashioning the raw material in the larger part of their productions.

Limoges is famous for its enamel, which is one of the national arts of France. Enamel is a glass, produced from the mixture of different borates and silicates, fusible at a low temperature. This mixture is colorless, but it combines with great facility under heat with almost all metallic oxides, and acquires, according to the nature of these oxides, all the tones of precious stones and gems. Enamel may be applied to glass and metals as well as pottery, provided the metals are less fusible than the metal itself, such as platinum, gold, silver, copper and iron. We illustrate a centre-piece covered with a milk-white enamel. Enamels *de basse taille* are those in which figures or ornaments are engraved in intaglio on the metal before the enamel is molten over the surface. When these figures are engraved in relief, the enamel is called *de relief*. Translucent enamelling of this kind was much used in the thirteenth, fourteenth and fifteenth centuries. Cloisonnè enamels are those in which compartments are formed of thin bands of metal, are bent into a design and soldered to the surface of the plate destined to receive the enamel. The beauty of enamel consists in its precious gem-like aspect. The effects obtained by vitrified coats of enamel on glass, metal or china, each carrying its color perfectly incorporated, exercise a powerful charm on the eye.



Old Japanese Porcelain.

The first European hard porcelain was made at Dresden by Böttcher, after numberless experiments and years of labor; and the first manufactory was established at Weissen in 17 5, under the patronage of Augustus II., elector of Saxony. Böttcher was appointed the director.

The earliest Böttcher ware is reddish brown and unglazed—stoneware rather than porcelain, and his first white porcelain pieces were ornamented with flowers in low relief. Unwearied as his efforts had been, chance and not science at last brought him the material which he wanted. A white, soft earth had been introduced, ground into an impalpable dust, as a substitute for wheat flour for hair powder, at that time in general use. Böttcher observed one day its unusual weight and inquired where the powder came from. He learned that it was earthy; he tried it, and found it to be the long sought for "Kaolin," the substance which forms the principal basis of porcelain.

Improvements rapidly grew in the manufacture of Dresden china. At first, the subjects painted were imitations of Chinese decoration, but these were soon succeeded by magnificent services with intricate gold borders, and medallions with flowers and other designs. Then followed vases and other objects with exquisite paintings upon richly colored grounds, copies of the best pictures of the Flemish school, or birds and insects, flowers and animals. Modelled flowers and little statuettes, candlesticks, groups and single figures, are also among the most beautiful productions of the best period of Dresden china. The quality greatly declined towards the end of the eighteenth century. The well-known Dresden mark, the crossed swords, was first used about the year 1722.

Dresden was not the only German city which became famous in the last century for porcelain. At Vienna, Berlin, Frankenthal, Furstenburg, and other places, were very celebrated manufactories, but our space will not permit any separate account of them. The different qualities and marks are explained in many of the large works upon pottery.

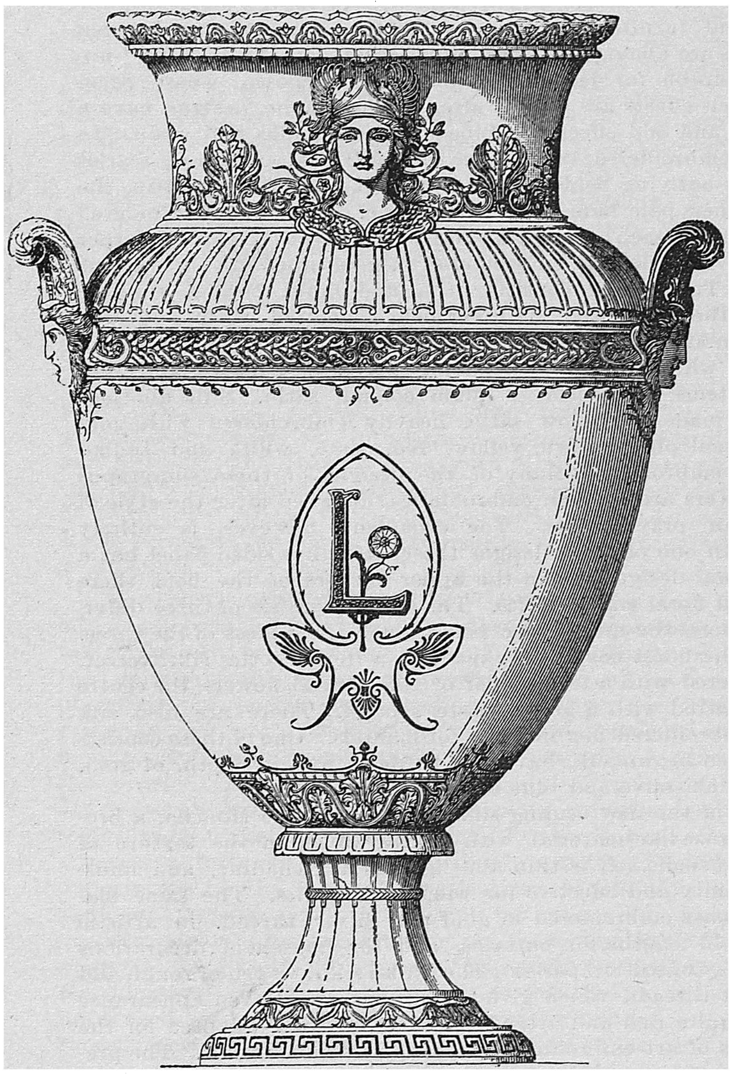
In Spain, porcelain was produced at the royal manufactory of Buen Retiro, where royal commands were executed as at Sèvres, as well as in almost every large town in Andalusia, in the beginning of the eighteenth century. The greatest curiosity in interior decoration in the Royal Palace of Madrid was the application of porcelain to the walls of the Sala de Porcellana which is ornamented from floor to ceiling with slabs of porcelain. These slabs are of a milky white hue, upon which are decorated subjects in strong relief (see illustration). These subjects, which occupy the centre of the panels, are interspersed with medallions that are connected with the corners and jambs of the doors, and with the mirror frames, also made of porcelain, and are finally incorporated, so to speak, in the frieze fashioned out of the same material. Altogether, the decoration is in exquisite taste, and is, in its way, superior to anything of the kind elsewhere.

The first porcelain works set up in England were at Chelsea and Bow, in the latter half of the seventeenth century. The English porcelain was naturally soft—*tendre naturelle*—and is peculiar from the fact that it will not bear any fresh exposure to the heat of the furnace without cracking, so that it is impossible to repaint any specimens of it. The early specimens were based on French models, the latter ones on German, and many specimens approached very near to the best productions of Sèvres and Dresden, particularly those of a fine claret color peculiar to Chelsea. Bow china, which is made at Stratford le Bow, is inferior to Chelsea, but quainter in device. The manufacture was principally restricted to tea and dessert sets, and ceased in the early part of the eighteenth century. The Derby porcelain is very beautiful in color, a bright blue, but is not equal in point of execution to the Chelsea ware, while the paste of the Worcester productions is inferior to both. The original manufacture of this ware was in imitation of the blue-and-white Nankin.

The interest in the manufacture of the superior kinds both of porcelain and pottery, very naturally declined when gold and silver plate were substituted for them, but of late years the revival which has taken place in regard to the artistic industries generally in England has had a proportionately beneficial effect on the potter's art, as the mere mention of such names as Minton and Doulton will sufficiently instance. It forms no part of these notes to deal with contemporary productions, but those who wish to make a closer study of pottery and porcelain would do well to pay a visit to either of the establishments named, and, by a study of the reproductions of past glories side by side with examples of a newer style, to satisfy himself as to the exceptionally good position which England holds in the current history of the ceramic art.

A visitor to the late Paris Exhibition writes to us that its value, as far as artistic teachings were concerned, was that from the French we could learn the value of finish in production and the commercial value of highly skilled workmen to carry out ideas in an artistic spirit; from the Italians, as a whole, a higher style of thought in ornamental and decorative art; and, from the Indian section, notwithstanding their somewhat barbaric richness of ornament, certain principles that might be incorporated with valuable results in our art industries. He adds the remark, that the French mainly aim at forceful expression in design; and that whilst for carpet, they make clever patterns, and are dexterous and artistic in the management of colors. They do not succeed in producing good carpets; the scroll-work being extravagant, and flowers being perverted from their simple, natural beauty, into forms based on the grossest known to artistic schools.

Sevres Vase by M. Lameire.



Sevres Vase by M. Mayeux.

Comparative lightness is now a highly appreciated quality in furniture, and accordingly papier maché is finding more extended use for sunk panels and relief ornaments as well as for figures in the round. The highly beautiful finish of which it admits by means of enamel color, and the delicacy and sharpness of contours that may be imparted to relief forms are in its favor. Dead gilding may be applied by going over the ground with a pencil dipped in color mixed with bright or burnished gilded ornaments, on the surface the following methods may be adopted: The gold leaf is laid on a weak solution of isinglass; on this, when dry, the design is pencilled in copal varnish; the superfluous gold is wiped off with a cotton or wool dob, and the same course is followed with the asphaltum when dry, which leaves the ornament in bright gold, which is coated afterwards with copal varnish. The colors used in painting papier maché are ground in water and mixed with so much whiting as may be judged sufficient for the purpose, some dissolved glue being added to hold the colors.

The business carried on in rattan furniture at this season is year by year enlarging, the trade being stimulated by the countless elegant forms in which the material is wrought. The interlacing by which forms are produced and diversified by varied ornamental figures, is akin to knitting. The natural enamel suffices for service, but colors and gilding may be very effectively applied. On lounges, cushions will supply good contrasting colors. With articles in which shells appear, light wood is introduced at times, bird's eye maple being a favorite, this wood being also sometimes used as a border to rattan tables. Rattan furniture has the advantage of lightness, allowing of chairs and tables being easily moved in this warm weather from apartments to verandas and lawns.

Ornament being a mere accessory to that which it adorns, and to which its type has no affinity, is based on principles illustrated by natural objects rather than on their individual appearances; but even simulation produces distinct appearances, as the product of human skill in wholly different materials. The chief attraction in ornament, like clusters of flowers in nature, is general effect; the details may be admirable, as far as skill is concerned; like the calyxes and petals of flowers they may have symmetry in form and present beautiful color contrasts; but admiration will only arise by the contribution they afford the general result.

To render color patterns on muslin transparent, first size the textile with a solution of turpentine and wax or a weak solution of glue in water. The colors may be mixed with Japan varnish.